

3/7

Question # 1 contd:

<p>9. Decomposition is a process in which the</p> <ol style="list-style-type: none"> <li>the description of a system down into small components.</li> <li>Tasks in the project distributed over team members</li> <li>Small and manageable sub-teams are made to complete the project</li> <li>To analyze project in small parts</li> </ol>	<p>10. The system analysis is a systematically study of:</p> <ol style="list-style-type: none"> <li>Transaction processing system</li> <li>Management Information system only</li> <li>Large computer software and data entry system only</li> <li>None of the above</li> </ol>
<p>11. If you are interviewing someone and he starts losing his control, showing anger and shouting. Which among the following reactions would be a mistake?</p> <ol style="list-style-type: none"> <li>You say: I will complain to your boss.</li> <li>You shout at him saying: sit down and keep quiet!</li> <li>You close the interview and leave</li> <li>You say: I will look into your complaints.</li> </ol>	<p>12. Which of the following are included in the advantages of the DFDs:</p> <ol style="list-style-type: none"> <li>Easy to test the system</li> <li>To know what are the hardware requirements of the system</li> <li>Hide information from users</li> <li>To communicate knowledge to top management only</li> </ol> <ol style="list-style-type: none"> <li>ii &amp; iii</li> <li>i &amp; iv</li> <li>iii &amp; iv</li> <li>none of the above.</li> </ol>
<p>13. If there are two child level DFDs in any system, then how many data stores should be used</p> <ol style="list-style-type: none"> <li>Two data stores</li> <li>Minimum one in each child level DFD</li> <li>Depends on the storage requirements</li> <li>Users should decide</li> </ol>	<p>14. Which question is not styled professionally for an interview?</p> <ol style="list-style-type: none"> <li>What do you think of this grading system?</li> <li>How many times this term you felt this grading system is inefficient?</li> <li>Please suggest a modification for the current grading system.</li> <li>All of the above</li> </ol>
<p>15. If you are interviewing someone and he/she requested confidentiality of the information he/she gives. Which one would be your best answer?</p> <ol style="list-style-type: none"> <li>I will try my best, but I cannot promise you.</li> <li>I am sorry. My boss has to know who is giving this information.</li> <li>Of course. This information will be totally secured and kept confidential.</li> <li>Why? Is there any problem?</li> </ol>	<p>16. System development life cycle is phased approach strategy to develop computer information system, why a number of phases are used to develop a system,</p> <ol style="list-style-type: none"> <li>It help us to divide the system into small modules</li> <li>It help us to evaluate the result of one event/step before we proceed for the other</li> <li>It help us to divide the work amongst the team members.</li> <li>None of the above</li> </ol>

SEM 1  
2002/2003

2

ITCS311 Final exam

**Question # 1:20 MCQs (20 points): Select the best answer. There is only one best answer.**

<p>The best fact-gathering technique for a system built for an international company with several branches in several countries would be</p> <ol style="list-style-type: none"> <li>Studying the system documentation</li> <li>A questionnaire.</li> <li>An Interview</li> <li>Watching the behavior of the people with the system</li> </ol>	<p>In huge project, operational feasibility is conducted to know:</p> <ol style="list-style-type: none"> <li>whether the project is suitable from the operational point of view.</li> <li>whether the project can be purchased</li> <li>whether the operational cost is low or high</li> <li>none of the above</li> </ol>
<p>Interview conducted in the form of JAD can</p> <ol style="list-style-type: none"> <li>Provide better solution to unresolved or complicated issues but high cost</li> <li>Minimize the time</li> <li>Give good experiences to the project team</li> <li>a &amp; c</li> </ol>	<p>Information center are normally created</p> <ol style="list-style-type: none"> <li>When users are required to be trained on regular basis after the implementation</li> <li>Implementing new system</li> <li>Operating new system and Providing help to system users</li> <li>All of the above</li> </ol>
<p>A comparison can be made between old and new system using</p> <ol style="list-style-type: none"> <li>Programs of both systems</li> <li>DFDs of both systems</li> <li>Process specifications of both systems</li> <li>Output design of both systems</li> </ol>	<p>Indicate, which of the following are some of the objectives of a good input design.</p> <ol style="list-style-type: none"> <li>easy to train users with it</li> <li>consistency, simplicity and optimum</li> <li>effectiveness, low-cost and dynamic</li> <li>a &amp; b</li> </ol>
<p>The main difference between bipolar and closed ended questions is:</p> <ol style="list-style-type: none"> <li>closed ended provide rich details than bipolar questions</li> <li>closed ended questions are more reliable than bipolar questions</li> <li>closed questions are easy to ask as compared to bipolar questions</li> <li>none of the above</li> </ol>	<p>Absolute zero is used with which of the following scales:</p> <ol style="list-style-type: none"> <li>Nominal</li> <li>interval</li> <li>Ratio</li> <li>Both a &amp; b</li> </ol>
<p>Relationship of activities cannot be shown properly if project is scheduled with:</p> <ol style="list-style-type: none"> <li>Gantt Chart</li> <li>PERT</li> <li>Both Gantt and PERT</li> <li>None of the above</li> </ol>	<p>In a Child Level DFD which of the following is true:</p> <ol style="list-style-type: none"> <li>It is the lowest level in DFDs</li> <li>It contains one process</li> <li>Its process number contains decimal points</li> <li>It helps the designer to grasp the basic data movement</li> </ol>



## Question #1 Continued:

Simple natural language statements such as add, multiply, move, etc are used to develop process specifications	Which are the following are not used to draw DFDs:
<ul style="list-style-type: none"> <li>a. Based on Structured English method</li> <li>b. Based on decision table</li> <li>c. Based on Tress</li> <li>d. Based on structured logic method</li> </ul>	<ul style="list-style-type: none"> <li>a. Relationship.</li> <li>b. Entity</li> <li>c. Flow of data</li> <li>d. Process</li> <li>e. Data store</li> </ul>
In structured English you can express logic in terms of:	In a DFD, the data stores are
<ul style="list-style-type: none"> <li>a. Sequence of conditions</li> <li>b. Rules and alternative rules</li> <li>c. a &amp; b</li> <li>d. None of the above</li> </ul>	<ul style="list-style-type: none"> <li>a. A point of communication between the processes</li> <li>b. Output from processes</li> <li>c. Variables in programs</li> <li>d. Used as storage for any information.</li> </ul>
In a decision table we find all possible rules by	Implementations of the Information System consists of:
<ul style="list-style-type: none"> <li>a. 2 raised to the power of number of actions</li> <li>b. 2 raised to the power of number of conditions</li> <li>c. We have to identify the actions ourselves manually</li> <li>d. None of the above</li> </ul>	<ul style="list-style-type: none"> <li>a. Testing, Training, operations and evaluations</li> <li>b. Creating an information center, making training plans and conducting trainings, and conversion</li> <li>c. Operations and evaluations</li> <li>d. None of the above</li> </ul>
In most systems, users are trained when:	Projects in big and small organizations are selected if:
<ul style="list-style-type: none"> <li>a. the system implementation and installation are completed in the organization</li> <li>b. when an Information center is created</li> <li>c. when programs are developed and tested but not yet implemented</li> <li>d. when the users are free and available</li> </ul>	<ul style="list-style-type: none"> <li>a. top management support it.</li> <li>b. project is proposed by Vice President of the organization</li> <li>c. project deal with the sale system of the organization</li> <li>d. cost of the project is low</li> </ul>
Is it possible to implement system without testing it?	Output can reach to unauthorized persons.
<ul style="list-style-type: none"> <li>a. True.</li> <li>b. False</li> <li>c. Depends on the users</li> <li>d. Does not make any sense</li> </ul>	<ul style="list-style-type: none"> <li>a. When produces more copies than required.</li> <li>b. When produced with printers</li> <li>c. When produced for many users</li> <li>d. When produced over the internet in on-line environment</li> </ul>

2/7

meaning

Question # 1. (32 points) Choose the best answer, there is only one best answer.

<p>1. A system analyst is the person who:</p> <ul style="list-style-type: none"> <li>a. Write code for the database management system</li> <li>b. Identifies the requirements of the system and creates plans for the new one</li> <li>c. Maintain the system</li> <li>d. Is the head of the information department in the company?</li> </ul>	<p>2. A feasibility study determines</p> <ul style="list-style-type: none"> <li>a. The security requirement of the system</li> <li>b. The problem specifications</li> <li>c. The design specification</li> <li>d. Whether the new system is worth creating or not.</li> </ul>
<p>3. Open-ended questions are used in questionnaire to get:</p> <ul style="list-style-type: none"> <li>a. Users suggestions to develop DFD</li> <li>b. Detailed information about the new-system</li> <li>c. Detailed information about old-system</li> <li>d. Information about user interface</li> </ul>	<p>4. Leniency problem occurs when</p> <ul style="list-style-type: none"> <li>a. Ratios scales are used</li> <li>b. Respondent is easy rater</li> <li>c. Questionnaire is very long</li> <li>d. None of the above</li> </ul>
<p>5. Closed ended questions are asked either in interview or questionnaire when</p> <ul style="list-style-type: none"> <li>a. the number of the users is less than 10</li> <li>b. when specific information is required about the security system of the project</li> <li>c. response is required from a large number of users in the project</li> <li>d. none of the above</li> </ul>	<p>6. The structure of questions is not important when</p> <ul style="list-style-type: none"> <li>a. the interview is done in two or three steps</li> <li>b. the interview consists of more than two hours</li> <li>c. when the interviewee is not known</li> <li>d. none of the above</li> </ul>
<p>7. The process of selecting project a crucial step in system developing, suppose you have chosen a wrong project, but you do not know it until the middle of the project, what decision would you make about the project at this stage:</p> <ul style="list-style-type: none"> <li>a. Project should be terminated and delete all records of it so the head of organization does not know it</li> <li>b. Project should be continue because termination may create a reputation problem for you in the organization</li> <li>c. Project should be stopped without delay and informed all concerns people</li> <li>d. Ask another system analyst to do this project</li> </ul>	<p>8. If you feel in the middle of Interview that you have chosen a wrong for this interview, which of the following steps would you take:</p> <ul style="list-style-type: none"> <li>a. stop the interview immediately</li> <li>b. continue the interview but skip questions if possible</li> <li>c. ask only open-ended questions</li> <li>d. tell the interviewee that you are not the right person and ask him who is the right person these questions</li> </ul>



2/7

meaning

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<p>1. A system analyst is the person who:</p> <ul style="list-style-type: none"> <li>a. Write code for the database management system</li> <li>b. Identifies the requirements of the system and creates plans for the new one</li> <li>c. Maintain the system</li> <li>d. Is the head of the information department in the company?</li> </ul>	<p>2. A feasibility study determines</p> <ul style="list-style-type: none"> <li>a. The security requirement of the system</li> <li>b. The problem specifications</li> <li>c. The design specification</li> <li>d. Whether the new system is worth creating or not.</li> </ul>
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**Question #2: (10 points)**

Ever since you entered the door, your interviewee, Max Marks, has been shuffling papers, looking at his watch, and lighting and snuffing out cigarettes. Based on what you know about interviews, you guess that Max is nervous because of the other work that he needs to do.

In a paragraph, describe how you would deal with this situation so that the interview can be accomplished with Max's full attention. Max cannot reschedule the interview for a different day.

Questions #3 (20 points): Consider the following situation:

Consider pay-roll system of an organization where all employees are divided into two categories: Full-time and part-time. **F=full-time** and **P=part-time** in the below table.

Simplify the table by removing rules which are not necessary or redundant.

Conditions and Actions	Rules					
	1	2	3	4	5	6
Employee type	F	P	F	P	F	P
Hours worked	<40	<40	40	40	>40	>40
Pay base salary	X		X		X	
Calculate hourly wage		X		X		X
Calculate overtime						X
Produce absence report		X				

Simplified Table ?

Write Structured English for the Simplified table?



## Question # 1 contd:

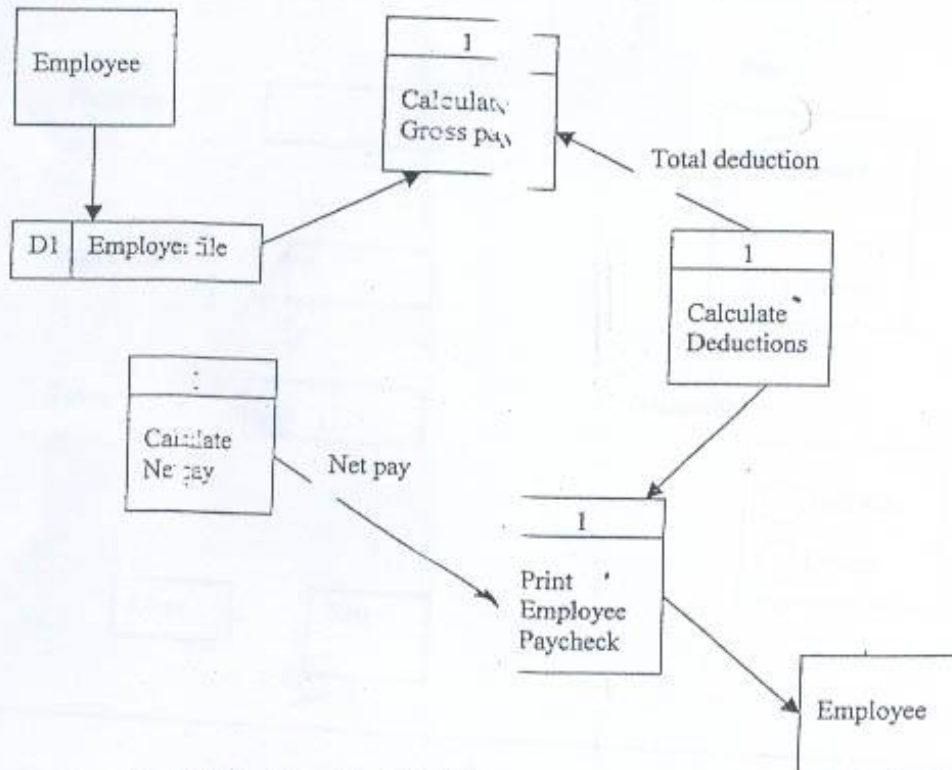
<p>11. Who normally should attend the JAD session if organized by the system during the information gathering time:</p> <ul style="list-style-type: none"> <li>a. vendors of hardware and software systems</li> <li>b. hardware experts</li> <li>c. Operational level users</li> <li>d. None of the above</li> </ul>	<p>12. If you are interviewing someone and he/she requested confidentiality of the information he/she gives. Which one would be your best answer?</p> <ul style="list-style-type: none"> <li>a. I will do it but later you disclose it to yours' team members</li> <li>b. I am sorry. My boss has to know who is giving this information.</li> <li>c. Of course. This information will be totally secured and kept confidential but will only be used to develop an effective new system for yours' organization</li> <li>d. Why? Is there any problem? Can you tell me in detail.</li> </ul>
<p>13. Which of the following behaviors of employees is considered to identify problem with the current system</p> <ul style="list-style-type: none"> <li>a. Job dissatisfaction.</li> <li>b. Employees dislike the job structure</li> <li>c. Employee are not happy with the office location and their</li> <li>d. b &amp; c</li> </ul>	<p>14. one of the main criteria to select a project for development is:</p> <ul style="list-style-type: none"> <li>a. It must be cheaper than other all projects</li> <li>b. It must be easy to develop</li> <li>c. Project belongs to yours' friend</li> <li>d. none of the above.</li> </ul>
<p>15. System development life cycle is phased approach to develop computer information system, why a number of phases are used to develop a system,</p> <ul style="list-style-type: none"> <li>a. It help us to reduce the amount of work</li> <li>b. It help us to develop a successful system because we will be able to evaluate the outcome of one event/step before we proceed for the others</li> <li>c. It help us to divide the work amongst the team members</li> <li>d. None of the above</li> </ul>	<p>16. If you are interviewing someone and he starts losing his control, showing anger and shouting. Which among the following reactions you would take?</p> <ul style="list-style-type: none"> <li>a. You say: I will not develop system for yours' organization</li> <li>b. You shout at him saying: sit down and keep quiet!</li> <li>c. You stop the interview and complaint to his boss</li> <li>d. You say: I will look into your complaints</li> </ul>



## Questions #4 (10+20 points):

Consider the following 0-Level DFD which produces an Employee Paycheck. Currently, the DFD contains a number of flaws (mistakes), remove these mistakes by redesigning/drawing the 0-level DFD. You are also required to make context level DFD for the system.

Hints about the system: Paychecks are prepared for each employee using gross salary, loans taken by the employee, leave period and allowances. Loans (if any) and leave period are deducting from the Gross Salary and allowances are added to it (Gross Salary). The net pay of employee is produced in the form of a paycheck. The system also keeps information about paycheck issued to all employees.



- Draw context level DFD.
- Redesign 0-Level DFD.

Question #3: (10 points) Consider the following questions:

Which of the questions types (Open and closed ended) would be more suitable for the interview in the following situations:

1. [ ] First interview with the Head of a Bank
2. [ ] Final interview in a project to know the 'computer understanding' of users in the organization.
3. [ ] A lot of users from lower-level management is to be interviewed.
4. [ ] General opinion of the users is required to start the project.
5. [ ] Interview is conduct to know what the top-management thinks about the project.
6. [ ] The results of different interview need a comparative analysis.
7. [ ] Head or president of the organization is to be interviewed
8. [ ] Survey is required to know that how many users can use Online systems in the organization.
9. [ ] Interview is to be conducted with the Mangers of the Hotel
10. [ ] Specific information about the project is required to the team.

Questions # 4 (5 points):

Which of the Activity Planning methods (PERT and Gantt Chart) will be used in the following situations:

1. [ ] The project is big and many sub-teams are involved to complete it.
2. [ ] The project consists of many interrelated activities and a number of people would work in parallel to complete it.
3. [ ] The sequence of activities is important.
4. [ ] The Team should be able to speed-up project if and when it is late.
5. [ ] Activity planning must be discussed with users where users are not familiar with computer.

## Question # 5 (20 points)

The following is a data entry screen, designed by a System Analyst. This design shows a number of flaws. You are required to identify these flaws and redesign the screen to get better results.

Complete the detail on this screen:

The form is a rectangular box containing the following elements:

- Name:** A text label followed by a rectangular input field.
- Street:** A text label followed by a rectangular input field.
- Phone no:** A text label followed by a rectangular input field.
- Post Code:** A text label followed by a rectangular input field.
- Town:** A text label followed by a rectangular input field.
- Sex:** A text label followed by a group box containing two radio buttons labeled "Male" and "Female".
- Nationality:** A text label followed by a group box containing two radio buttons labeled "Bahraini" and "Others".
- Buttons:** A "Save" button at the top right, and "Clear" and "Exit" buttons at the bottom left.

- Redesign the screen here.



5/7

Question #3: Consider the following questions: Interviewing an advisor by a student to make plan for the next semester;

A. Indicate which of the questions are closed or open ended? (10 points)

1. When the semester will start? [ ]
2. Do you teach any course in the semester? [ ]
3. Can I take more than 5 courses? [ ]
4. Is it possible to drop a course after 3<sup>rd</sup> week of the semester? [ ]
5. Can you explain to me the main aims of the course on System Analysis and Design which you are going to teach in the next semester? [ ]
6. How many CS courses should be taken in the semester? [ ]
7. What is the procedure to get registration before the semester starts? [ ]
8. You know sir, that this my 4<sup>th</sup> semester, which CS courses may be useful to take in this semester in order to get good knowledge about programming? [ ]
9. I can take two non-CS course in the next semester? [ ]
10. You just said that I cannot take two non-CS courses, what are reasons? [ ]

B. Convert the above questions into a DIMOND shape structure: (10 points)

Question # 1. (32 points) Choose the best answer, there is only one best answer.

1. The system analysis is a systematically study of:	2. Decomposition is a process in which the
<ul style="list-style-type: none"> <li>a. Transaction processing system</li> <li>b. Management Information system only</li> <li>c. Large computer software and data entry system only</li> <li>d. None of the above</li> </ul>	<ul style="list-style-type: none"> <li>a. the description of a system divided into small components.</li> <li>b. Tasks in the project distributed over team members</li> <li>c. Small and manageable sub-teams are made to complete the project</li> <li>d. To analyze project in small parts</li> </ul>
3. A feasibility study determines	4. A system analyst is the person who:
<ul style="list-style-type: none"> <li>a. The problem specifications</li> <li>b. The design specification</li> <li>c. Whether the new system is worth creating or not for the organization</li> <li>d. Whether the new system is worth creating or not based on economical feasibility only</li> </ul>	<ul style="list-style-type: none"> <li>a. Identifies the requirements of the new system and creates plans for the new one</li> <li>b. Identify problem with current system</li> <li>c. Is the head of the information department in the company.</li> <li>d. a &amp; b</li> </ul>
5. Leniency problem occurs when	6. Open-ended questions are used in questionnaire:
<ul style="list-style-type: none"> <li>a. Mistake in making questions</li> <li>b. Respondent is easy rater</li> <li>c. a &amp; b</li> <li>d. Ratios scales are used</li> </ul>	<ul style="list-style-type: none"> <li>a. To identify mistakes and problems with the current system and get users suggestion for the development of the new system</li> <li>b. Precise information about the new-system</li> <li>c. To make an excellent feasibility study of the system for the organization</li> <li>d. Information about user interface only</li> </ul>
7. The 'diamond shape' structure of questions is used	8. Closed ended questions are asked either in interview or questionnaire when
<ul style="list-style-type: none"> <li>a. when two interviews are required in project</li> <li>b. equal numbers of open and closed ended questions</li> <li>c. both open and close ended questions are equally important</li> <li>d. open ended questions are more important than close ended</li> </ul>	<ul style="list-style-type: none"> <li>a. the number of the users is less than 10</li> <li>b. if it is difficult to make open ended questions about the subject issue</li> <li>c. if the project is too long, i.e., will be completed in more than 2 years</li> <li>d. none of the above</li> </ul>
9. If you feel in the middle of interview that you have chosen a wrong person for this interview, which of the following steps would you take:	10. The process of selecting project a crucial step in system developing, suppose you have chosen a wrong project, but you do not know it until the middle of the project, what decision would you make about the project at this stage:
<ul style="list-style-type: none"> <li>a. stop the interview immediately</li> <li>b. complete the interview but skip important and time consuming questions</li> <li>c. ask only close-ended questions</li> <li>d. tell the interviewee that you are not the right person and ask him who is the right person for these questions</li> </ul>	<ul style="list-style-type: none"> <li>a. Project should be defined and make new objectives without informing users</li> <li>b. Project should be stopped without delay and informed all concerns people</li> <li>c. Ask another system analyst to do this project</li> <li>d. None of the above</li> </ul>

6/7

year  
year

Question # 4 (10+20 = 30 points) Consider the following system:

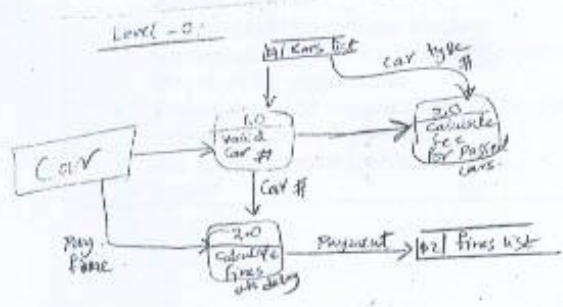
- All vehicles in Bahrain are tested once a year by the traffic directorate to ensure that they are safe to be driven on the roads in Bahrain.
- Each group of cars are allocated one month in the year for testing depending on the registration number, e.g., cars with registration numbers between 12500 and 18000 are tested in any day during March.
- If a car is not brought for testing during the allocated month, then a fine of one Diner per day is charged for every day of delay, with a maximum of one hundred Diners fine.
- There is a fee for every car that passes the test which depends on the type of vehicle, e.g., the fee for testing a lorry is BD 20/-

Design the DFD for the above system (with complete details). Make sure that all levels (Context and 0-Level only) of the DFD are shown clearly.

Context DFD?

0-Level DFD (detailed Diagram)?

Context :-





4/7

Question #2 (18 points) Consider the following task description and constraints for

Description	Task	Must follow	Time (days)
Conduct Interview	A	None	10
Prepare interview report	B	A	2
Make questionnaire and implement it	C	A	7
Create DFD	D	C	5

a. Draw a Gantt chart using the above information.

b. Draw a PERT Diagram using above information and identify critical path on diagram.

**Questions #5 (8 points)**

Identify the mistakes in the following question and rewrite the question by removing these mistakes.

How often do you make back-up of yours' computer files?

1. Frequently
2. Sometime
3. Hardly at all
4. Not making

Identify mistakes?

Rewrite the question?

4/7

Question #2 (8+12=20 points) Consider the following tasks description answer the following questions:

Description	Task	Must follow	Time (days)
Setting objective	A	None	1
Selecting team	B	None	2
Conduct Interview	C	A, B	10
Questionnaire#1	D	C	10
JAD sessions	E	C	3
Questionnaire #2	F	D	15
Making DFD	G	E,F	3

a. Draw a Gantt chart using the above information, try to show the time with the length of the BAR in yours' Diagram.

b. Draw a PERT Diagram using above information and identify critical path on diagram.